

# **EXHIBIT 6**

# **McGRAW-HILL DICTIONARY OF SCIENTIFIC AND TECHNICAL TERMS**

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On the cover: Representation of a fullerene molecule with a noble gas atom trapped inside. At the Permian-Triassic sedimentary boundary the noble gases helium and argon have been found trapped inside fullerenes. They exhibit isotope ratios quite similar to those found in meteorites, suggesting that a fireball meteorite or asteroid exploded when it hit the Earth, causing major changes in the environment. (Image copyright © Dr. Luann Becker. Reproduced with permission.)

Over the six editions of the Dictionary, material has been drawn from the following references: G. M. Garrity et al., *Taxonomic Outline of the Prokaryotes*, Release 2, Springer-Verlag, January 2002; D. W. Linzey, *Vertebrate Biology*, McGraw-Hill, 2001; J. A. Pechenik, *Biology of the Invertebrates*, 4th ed., McGraw-Hill, 2000; U.S. Air Force Glossary of Standardized Terms, AF Manual 11-1, vol. 1, 1972; F. Casey, ed., *Compilation of Terms in Information Sciences Technology*, Federal Council for Science and Technology, 1970; *Communications-Electronics Terminology*, AF Manual 11-1, vol. 3, 1970; P. W. Thrush, comp. and ed., *A Dictionary of Mining, Mineral, and Related Terms*, Bureau of Mines, 1968; *A DOD Glossary of Mapping, Charting and Geodetic Terms*, Department of Defense, 1967; J. M. Gilliland, *Solar-Terrestrial Physics: A Glossary of Terms and Abbreviations*, Royal Aircraft Establishment Technical Report 67158, 1967; W. H. Allen, ed., *Dictionary of Technical Terms for Aerospace Use*, National Aeronautics and Space Administration, 1965; *Glossary of Stinfo Terminology*, Office of Aerospace Research, U.S. Air Force, 1963; *Naval Dictionary of Electronic, Technical, and Imperative Terms*, Bureau of Naval Personnel, 1962; R. E. Huschke, *Glossary of Meteorology*, American Meteorological Society, 1959; *ADP Glossary*, Department of the Navy, NAVSO P-3097; *Glossary of Air Traffic Control Terms*, Federal Aviation Agency; *A Glossary of Range Terminology*, White Sands Missile Range, New Mexico, National Bureau of Standards, AD 467-424; *Nuclear Terms: A Glossary*, 2d ed., Atomic Energy Commission.

#### **McGraw-Hill Dictionary of Scientific and Technical Terms, Sixth Edition**

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## extender plasticizer

short cable to make a test point more conveniently accessible to a test probe. { ik'sten-dar }

**extender plasticizer** See secondary plasticizer. { ik'sten-dar 'plas-tə-siz-ər }

**extend flip-flop** [COMPUT SCI] A special flag set when there is a carry-out of the most significant bit in the register after an addition or a subtraction. { ik'stend 'flip,flap }

**extending flow** [HYD] A glacial flow pattern in which velocity increases as the distance downstream becomes greater. { ik'stend-ɪŋ ,flō }

**extensibility** [MATER] The extent to which a material can be stretched without causing it to tear or break. [MECH] The amount to which a material can be stretched or distorted without breaking. { ik'sten-sə'bɪl-əd-ē }

**extensible language** [COMPUT SCI] A programming language which can be modified by adding new features or changing existing ones. { ik'sten-sə'bəl 'lɑŋ-gwɪj }

**Extensible Markup Language** [COMMUN] A set of rules for writing markup languages which provides a robust, machine-readable information protocol that can handle complex objects. Abbreviated XML. { ik'sten-sə'bəl 'mɑrk,əp ,lɑŋ-gwɪj }

**extensible system** [COMPUT SCI] A computer system in which users may extend the basic system by implementing their own languages and subsystems and making them available for others to use. { ik'sten-sə'bəl 'sɪs-təm }

**extension** See extension fields. [PHYSIO] A movement which has the effect of straightening a limb. { ik'sten-ʃən }

**extensional fault** See tension fault. { ik'sten-ʃən-əl 'fɔlt }

**extension bolt** [DES ENG] A vertical bolt that can be slid into place by a long extension rod; used at the top of doors. { ik'sten-ʃən ,bɔlt }

**extension cord** [ELEC] A line cord having a plug at one end and an outlet at the other end. { ik'sten-ʃən ,kɔrd }

**extension field** [MATH] An extension field of a given field  $E$  is a field  $F$  such that  $E$  is a subfield of  $F$ . Also known as extension. { ik'sten-ʃən ,fi:ld }

**extension fracture** [GEOL] A fracture that develops perpendicular to the direction of greatest stress and parallel to the direction of compression. { ik'sten-ʃən ,frak-ʃər }

**extension jamb** [BUILD] A jamb that extends past the head of a door or window. { ik'sten-ʃən ,dʒɑm }

**extension joints** [GEOL] Fractures that form parallel to a compressive force. { ik'sten-ʃən ,dʒɔɪns }

**extension ladder** [DES ENG] A ladder of two or more nesting sections which can be extended to almost the combined length of the sections. { ik'sten-ʃən ,lɑd-ər }

**extension map** [MATH] An extension map of a map  $f$  from a set  $A$  to a set  $L$  is a map  $g$  from a set  $B$  to  $L$  such that  $A$  is a subset of  $B$  and the restriction of  $g$  to  $A$  equals  $f$ . { ik'sten-ʃən ,mɑp }

**extension mechanism** [COMPUT SCI] One of the components of an extensible language which allows the definition of new language features in terms of the primitive facilities of the base language. { ik'sten-ʃən ,mek-ə-nɪz-əm }

**extension ore** See possible ore. { ik'sten-ʃən ,ɔr }

**extension register** [COMPUT SCI] A register that is combined with an accumulator register for calculations involving multiple precision arithmetic. { ik'sten-ʃən ,rej-ə-stər }

**extension spring** [DES ENG] A tightly coiled spring designed to resist a tensile force. { ik'sten-ʃən ,sprɪŋ }

**extensive air shower** See Auger shower. { ik'sten-sɪv 'er ,ʃaʊ-ər }

**extensive property** [PHYS CHEM] A noninherent property of a system, such as volume or internal energy, that changes with the quantity of material in the system; the quantitative value equals the sum of the values of the property for the individual constituents. { ik'sten-sɪv 'prɒp-əd-ē }

**extensive shower** See Auger shower. { ik'sten-sɪv 'ʃaʊər }

**extensometer** [ENG] 1. A strainometer that measures the change in distance between two reference points separated 60–90 feet (20–30 meters) or more; used in studies of displacements due to seismic activities. 2. An instrument designed to measure minute deformations of small objects subjected to stress. { ek'sten'sam-əd-ər }

**extent** [COMPUT SCI] The physical locations in a mass-storage device or volume allocated for use by a particular data set. { ik'stent }

**exterior** [MATH] 1. For a set  $A$  in a topological space, the largest open set contained in the complement of  $A$ . 2. For a

## external centerless grinding

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plane figure, the set of all points that are neither on the figure nor inside it. 3. For an angle, the set of points that lie in the plane of the angle but not between the rays defining the angle.

4. For a simple closed plane curve, one of the two regions into which the curve divides the plane according to the Jordan curve theorem, namely, the region that is not bounded. { ek'stir-ē-ər }

**exterior algebra** [MATH] An algebra whose structure is analogous to that of the collection of differential forms on a Riemannian manifold. Also known as Grassmann algebra. { ek'stir-ē-ər 'al-jə-brə }

**exterior angle** [MATH] 1. An angle between one side of a polygon and the prolongation of an adjacent side. 2. An angle made by a line (the transversal) that intersects two other lines, and either of the latter on the outside. { ek'stir-ē-ər 'aŋ-gəl }

**exterior ballistics** [MECH] The science concerned with behavior of a projectile after leaving the muzzle of the firing weapon. { ek'stir-ē-ər bə'lis-tiks }

**exterior complex scaling** [ATOM PHYS] A mathematical transformation, which has been used to simplify the boundary conditions on the wave functions in an electron-atom collision, in which the variable  $r$ , representing the distance of the electron from the nucleus, is replaced, at values of  $r$  greater than some constant  $R$ , by  $R + (r - R)C$ , where  $C$  is a complex number with unit modulus and positive imaginary part. { ik'stir-ē-ər 'kəm,pleks ,skāl-ɪŋ }

**exterior content** See exterior Jordan content. { ek'stir-ē-ər 'kæn,tent }

**exterior Jordan content** [MATH] Also known as exterior content. 1. For a set of points on a line, the largest number  $C$  such that the sum of the lengths of a finite number of closed intervals that includes every point in the set is always equal to or greater than  $C$ . 2. The exterior Jordan content of a set of points,  $X$ , in  $n$ -dimensional Euclidean space (where  $n$  is a positive integer) is the greatest lower bound on the hypervolume of the union of a finite set of hypercubes that contains  $X$ . { ek'stir-ē-ər 'dʒɔrd-ən 'kæn,tent }

**exterior measure** See Lebesgue exterior measure. { ek'stir-ē-ər 'mezʒ-ər }

**extern** [COMPUT SCI] A pseudoinstruction found in several assembly languages which explicitly tells an assembler that a symbol is external, that is, not defined in the program module. { ek'stɜrn }

**external aileron** [AERO ENG] An aileron offset from the wing; that is, not forming a part of the wing. { ek'stɜrn-əl 'aɪ-lər-ən }

**external angle** [MATH] The angle defined by an arc around the boundaries of an internal angle or included angle. { ek'stɜrn-əl 'aŋ-gəl }

**external ankle height** [ARCH] A measure of the vertical distance taken from the lower end of the fibula to the floor. { ek'stɜrn-əl 'aŋ-kəl ,hɪt }

**external armature** [ELEC] Armature for a machine of special design in which the armature is a ring which rotates around the magnetic poles. { ek'stɜrn-əl 'ɑr-mə-ʃər }

**external auditory meatus** [ANAT] The external passage of the ear, leading to the tympanic membrane in reptiles, birds, and mammals. { ek'stɜrn-əl 'ɒd-ə,tɔr-ē mē'ad-əs }

**external beam** [NUCLEO] A beam of particles which originate in a particle accelerator and are directed outside the accelerator so that they can be used for experiments with external apparatus. { ek'stɜrn-əl 'bēm }

**external brake** [MECH ENG] A brake that operates by contacting the outside of a brake drum. { ek'stɜrn-əl 'brāk }

**external buffer** [COMPUT SCI] A buffer storage located outside the computer's main storage, often within a control unit or other peripheral device. { ek'stɜrn-əl 'bʌf-ər }

**external burning** [AGR] Combustion that can be established when a reactive fuel is injected onto the lateral surfaces of an airfoil or from the base of a projectile traveling at high speed, and, if properly controlled, can produce useful forces that can augment lift, provide attitude control, reduce or cancel drag, or produce thrust. { ik'stɜrn-əl 'bɜrn-ɪŋ }

**external carotid artery** [ANAT] An artery which originates at the common carotid and distributes blood to the anterior part of the neck, face, scalp, side of the head, ear, and dura mater. { ek'stɜrn-əl kə'rɒt-əd 'ɑrd-ə-rē }

**external centerless grinding** [MECH ENG] A process by which a metal workpiece is finished on its external surface by



**maritime position** [NAV] The location of a seaport or other point along a coast. { 'mar-ə,tīm pə'zish-ən }

**maritime satellite** See MARISAT. { 'mar-ə,tīm 'səd-əl,īt }

**maritime tropical air** [METEOROL.] The principal type of tropical air, produced over the tropical and subtropical seas; it is very warm and humid, and is frequently carried poleward on the western flanks of the subtropical highs. { 'mar-ə,tīm 'trāp-ə-kəl 'er }

**marjoram** [BOT] Any of several perennial plants of the genera *Origanum* and *Majorana* in the mint family, Labiatae; the leaves are used as a food seasoning. { 'mār-jə-rām }

**marjoram oil** [MATER] A colorless essential liquid whose chief components are terpenes, obtained from marjoram plants of the genus *Origanum*; used as a perfume in soaps, and in flavorings. { 'mār-jə-rām 'ōil }

**mark** [COMMUN] The closed-circuit condition in telegraphic communication, during which the signal actuates the printer; the opposite of space. [COMPUT SCI] A distinguishing feature used to signal some particular location or condition.

[NAV] 1. A charted conspicuous object, structure, or light serving as an indicator for guidance or warning to craft; a beacon; it may be a day-beacon or sea-mark depending upon its location, or a day-mark or lighted beacon depending upon its period of usefulness. 2. Fathoms marked on a lead line. [ORD] A designation followed by a serial number, used to identify models of military equipment. [STAT] The name or value given to a class interval; frequently, the value of the midpoint or the integer nearest the midpoint. { mārḱ }

**mark detection** [COMPUT SCI] That class of character recognition systems which employs coded documents, in the form of boxes or windows, in order to convey intended information by means of pencil or ink marks made in specific boxes. { 'mārḱ dī,tek-shən }

**marker** [IMMUNOL] Any antigen that serves to distinguish cell types. [ORD] A sign or signal for marking a location on land or water; frequently contains pyrotechnics. { 'mārḱ-ər }

**marker beacon** [NAV] A low-power radio beacon transmitting a signal to designate a small area, as an aid to navigation. { 'mārḱ-ər ,bē-kən }

**marker bed** [GEOL] 1. A stratified unit with distinctive characteristics making it an easily recognized geologic horizon. 2. A rock layer which accounts for a characteristic portion of a seismic refraction time-distance curve. 3. See key bed. { 'mārḱ-ər ,bed }

**marker buoy** [NAV] 1. A temporary buoy used in surveying to mark a location of particular interest, such as a shoal or reef. 2. See station buoy. { 'mārḱ-ər ,bōi }

**marker gene** [GEN] A gene with a known location on a chromosome and a clear-cut phenotype. { 'mārḱ-ər jēn }

**market analysis** [IND ENG] The collection and evaluation of data concerned with the past, present, or future attributes of potential consumers for a product or service. { 'mārḱ-ət ə,nal-ə'səs }

**mark-hold** [COMMUN] The transmission of a steady mark to indicate that there is no traffic over a telegraph channel; the upper marking frequency of a duplex channel (2225 hertz) is used to disable echo suppressors which may interfere with data communications. { 'mārḱ 'hōld }

**Mark-Houwink equation** [PHYS CHEM] The relationship between intrinsic viscosity and molecular weight for homogeneous linear polymers. { 'mārḱ 'haū,wīŋk i,kwā-zhən }

**marking and spacing intervals** [COMMUN] Intervals of closed and open conditions in transmission circuits. { 'mārḱ-īŋ əŋ 'spās-īŋ 'in-tər-vəlz }

**marking bias** [COMMUN] Bias distortion that lengthens the marking impulse. { 'mārḱ-īŋ ,bī-əs }

**marking current** [ELEC] Magnitude and polarity of current in the line when the receiving mechanism is in the operating position. { 'mārḱ-īŋ ,kə-rənt }

**marking-end distortion** [COMMUN] End distortion that lengthens the marking impulse. { 'mārḱ-īŋ 'end dī,stōr-shən }

**marking pulse** [ELEC] In a teletypewriter, the signal interval during which time the teletypewriter selector unit is operated. { 'mārḱ-īŋ ,pōls }

**marking wave** [ELEC] In telegraphic communications, that portion of the emission during which the active portions of the code character are being transmitted. Also known as keying wave. { 'mārḱ-īŋ ,wāv }

**Markov-based model** [COMPUT SCI] A model that represents a computer system by a Markov chain, which represents the set of all possible states of the system, with the possible transitions between these states. { 'mār,kōf ,bāst ,mād-əl }

**Markov chain** [MATH] A Markov process whose state space is finite or countably infinite. { 'mār,kōf ,čān }

**Markov inequality** [STAT] If  $x$  is a random variable with probability  $P$  and expectation  $E$ , then, for any positive number  $a$  and positive integer  $n$ ,  $P(|x| \geq na) \leq E(|x|^n)/a^n$ . { 'mār,kōf ,in-'i'kwāl-əd-ē }

**Markovnikoff's rule** [ORG CHEM] In an addition reaction, the additive molecule RH adds as H and R, with the R going to the carbon atom with the lesser number of hydrogen atoms bonded to it. { 'mār'kōv-nə,kōfs ,rīl }

**Markov process** [MATH] A stochastic process which assumes that in a series of random events the probability of an occurrence of each event depends only on the immediately preceding outcome. { 'mār,kōf ,prō-sās }

**mark reading** [COMPUT SCI] In character recognition, that form of mark detection which employs a photoelectric device to locate and convey intended information; the information appears as special marks on sites (windows) within the document coding area. { 'mārḱ ,rēd-īŋ }

**mark sensing** [COMPUT SCI] In character recognition, that form of mark detection which depends on the conductivity of graphite pencil marks to locate and convey intended information; the information appears as special marks on sites (windows) within the document coding area. { 'mārḱ ,sens-īŋ }

**mark-space multiplier** [ELECTR] A multiplier used in analog computers in which one input controls the mark-to-space ratio of a square wave while the other input controls the amplitude of the wave, and the output, obtained by a smoothing operation, is proportional to the average value of the signal. Also known as time-division multiplier. { 'mārḱ 'spās 'māl-tə,pfī-ər }

**mark-space ratio** See mark-to-space ratio. { 'mārḱ 'spās 'rā-shō }

**mark-to-space ratio** [ELECTR] The ratio of the duration of the positive-amplitude part of a square wave to that of the negative-amplitude part. Also known as mark-space ratio. { 'mārḱ 'tə 'spās 'rā-shō }

**mark-to-space transition** [COMMUN] The process of switching from a mark to a space. { 'mārḱ 'tə 'spās tran-'zish-ən }

**markup** [COMPUT SCI] The process of adding information (tags) to an electronic document that are not part of the content but describe its structure or elements. { 'mārḱ,əp }

**markup language** [COMPUT SCI] A set of rules and procedures for markup. { 'mārḱ,əp ,lag-gwīj }

**marl** [GEOL] A deposit of crumbling earthy material composed principally of clay with magnesium and calcium carbonate; used as a fertilizer for lime-deficient soils. Also known as malm. [TEXT] Two yarns of different colors or kinds twisted around each other. { 'mārl }

**marline** [NAV ARCH] A tarred two-stranded, left-handed hemp about 1/8 inch (3 millimeters) in diameter; used for neat seizings. { 'mār-līn }

**marline spike** [NAV ARCH] A tapered metal tool used to separate the strands of rope in splicing, and as a lever in marling and seizing. { 'mār-līn ,spīk }

**marlite** See marlstone. { 'mār,līt }

**marlstone** [PETR] 1. A consolidated rock that has about the same composition as marl; considered to be an earthy or impure argillaceous limestone. Also known as marlite. 2. A hard ferruginous rock of the Middle Lias in England. { 'mār,lstōn }

**marly** [GEOL] Pertaining to, containing, or resembling marl. { 'mār-lē }

**marmatite** [MINERAL] A dark-brown to black mineral composed of iron-bearing sphalerite. Also known as christophite. { 'mār-mə,tīt }

**marmolite** [MINERAL] A pale-green serpentine mineral, occurring in thin laminations; a variety of chrysotile. { 'mār-mə,līt }

**marmon clampband** [DES ENG] A metal band that wraps around the circumference of a special cylindrical joint between two structures, holding the structures together. { 'mār-mən 'klamp,ban }

**parsec** [ASTRON] The distance at which a star would have a parallax equal to 1 second of arc; 1 parsec equals 3.258 light-years or  $3.08572 \times 10^{13}$  kilometers. Derived from parallax-second. { 'pär,sek }

**parser** [COMPUT SCI] The portion of a computer program that carries out parsing operations. { 'pär,sär }

**parsettsite** [MINERAL]  $\text{Mn}_2\text{Si}_6\text{O}_{13}(\text{OH})_8$  A copper-red mineral composed of hydrous silicate of manganese. { 'pär'set,än,zit }

**Parseval's equation** [MATH] The equation which states that the square of the length of a vector in an inner product space is equal to the sum of the squares of the inner products of the vector with each member of a complete orthonormal base for the space. Also known as Parseval's identity; Parseval's relation. { 'pär-sə-välz i,kwä-zhän }

**Parseval's identity** See Parseval's equation. { 'pär-sə-välz i'den-əd-ē }

**Parseval's relation** See Parseval's equation. { 'pär-sə-välz re'lā-shän }

**Parseval's theorem** [MATH] A theorem that gives the integral of a product of two functions,  $f(x)$  and  $F(x)$ , in terms of their respective Fourier coefficients; if the coefficients are defined by

$$a_n = (1/\pi) \int_0^{2\pi} f(x) \cos nx dx$$

$$b_n = (1/\pi) \int_0^{2\pi} f(x) \sin nx dx$$

and similarly for  $F(x)$ , the relationship is

$$\int_0^{2\pi} f(x)F(x)dx = \pi \left[ \frac{1}{2}a_0A_0 + \sum_{n=1}^{\infty} (a_nA_n + b_nB_n) \right]$$

{ 'pär-sə-välz 'thir-əm }

**Parshall flume** [ENG] A calibrated device for measuring the flow of liquids in open conduits by measuring the upper and lower heads at a specified distance from an obstructing sill. { 'pär-shəl ,flüm }

**parsimony** [SCITECH] The principle that the simplest scientific explanation is best. { 'pär-sə,mō-nē }

**parsing** [COMPUT SCI] A process whereby phrases in a string of characters in a computer language are associated with the component names of the grammar that generated the string. { 'pär-siŋ }

**pars intermedia** [ANAT] The intermediate lobe of the adeno-hypophysis. { 'pärz ,in-tər'mē-dē-ə }

**parsley** [BOT] *Petroselinum crispum*. A biennial herb of European origin belonging to the order Umbellales; grown for its edible foliage. { 'pär-slē }

**parsley oil** [MATER] Colorless or pale-greenish-yellow liquid with parsley aroma; soluble in alcohol, ether, and chloroform; distilled from parsley seeds; used in medicine. { 'pär-slē ,oil }

**pars nervosa** [ANAT] The inferior subdivision of the neurohypophysis. Also known as pars neuralis. { 'pärz nər'vō-sə }

**pars neuralis** See pars nervosa. { 'pärz nü'räl-əs }

**parsnip** [BOT] *Pastinaca sativa*. A biennial herb of Mediterranean origin belonging to the order Umbellales; grown for its edible thickened taproot. { 'pär-snap }

**parsonsite** [MINERAL]  $\text{Pb}_2(\text{UO}_2)(\text{PO}_4)_2 \cdot 2\text{H}_2\text{O}$  A pale-yellow to brownish mineral composed of hydrous lead uranyl phosphate, occurring as a powder. { 'pär-sən,zit }

**Parsons-stage steam turbine** [MECH ENG] A steam turbine having a reaction-type stage in which the pressure drop occurs partially across the stationary nozzles and partly across the rotating blades. { 'pär-sənz 'stāj 'stēm 'tər-bən }

**pars tuberalis** [ANAT] A pair of processes that grow forward or upward along the stalk of the adeno-hypophysis. { 'pärz ,tü-bə'räl-əs }

**part** [ENG] An element of a subassembly, not normally useful by itself and not amenable to further disassembly for maintenance purposes. { 'pärt }

**part classification** [IND ENG] A coding scheme employed in automated manufacturing processes that uses four or more

digits to assign discrete products to families of parts. { 'pärt ,klas-ə-fə,kä-shən }

**part detection** [IND ENG] The recognition of parts and workpieces by a robot or a computer vision system. { 'pärt di,tek-shən }

**part family** [IND ENG] In the group technology concept, a set of related parts that can be produced by the same sequence of machining operations because of similarity in shape and geometry or similarity in production operation processes. { 'pärt ,fam-lē }

**parthenita** [INV ZOO] A stage, such as the sporocyst, redia, or cercaria, in the development of a fluke which reproduces parthenogenetically. { 'pär'then-əd-ə }

**parthenocarp** [BOT] Production of fruit without fertilization. { 'pär-thə-nō,kär-pē }

**parthenogenesis** [INV ZOO] A special type of sexual reproduction in which an egg develops without entrance of a sperm; common among rotifers, aphids, thrips, ants, bees, and wasps. { 'pär-thə-nō'jen-ə-səs }

**parthenomergony** [EMBRYO] Development of a nucleated fragment of an unfertilized egg following parthenogenetic stimulation. { 'pär-thə-nō-mə'gə-nē }

**parthenospore** See azygospore. { 'pär-thə-nə,spōr }

**partial** [ACOUS] Also known as partial tone. 1. A simple sinusoidal physical component of a complex tone. 2. A sound sensation component that is distinguishable as a simple tone, cannot be further analyzed by the ear, and contributes to the character of the complex sound; the frequency of a partial may be higher or lower than the basic frequency and may be an integral multiple or submultiple of the basic frequency. { 'pär-shəl }

**partial bulkhead** [NAV ARCH] A partition wall that does not extend across a compartment; used to strengthen the structure. { 'pär-shəl 'bolk,hed }

**partial carry** [COMPUT SCI] A word composed of the carries generated at each position when adding many digits in parallel. { 'pär-shəl 'kar-ē }

**partial Cauchy surface** [RELAT] A spacelike surface  $S$  which is intersected only once by each timelike or null curve; "partial" means that only a portion of the future history of the space-time can be predicted from  $S$ , that is, there exists a Cauchy horizon. { 'pär-shəl 'kō-shē ,sər-fäs }

**partial cleavage** [EMBRYO] Cleavage in which only part of the egg divides into blastomeres. { 'pär-shəl 'klē-vij }

**partial coherence** [PHYS] Property of two waves whose relative phase undergoes random fluctuations which are not, however, sufficient to make the wave completely incoherent. { 'pär-shəl kō'hir-əns }

**partial common battery** [COMMUN] Type of telephone system in which the talking battery is supplied by each individual telephone, and the signaling and supervisory battery is supplied by the switchboard. { 'pär-shəl 'kām-ən 'bad-ə-rē }

**partial condensation** [CHEM ENG] The cooling (or pressurization) of a saturated vapor until a part of it is condensed out as liquid. { 'pär-shəl ,känd-ən'sā-shən }

**partial correlation** [STAT] The strength of the linear relationship between two random variables where the effect of other variables is held constant. { 'pär-shəl ,kär-ə'lā-shən }

**partial correlation analysis** [STAT] A technique used to measure the strength of the relationship between the dependent variable and one independent variable in such a way that variations in other independent variables are taken into account. { 'pär-shəl ,kär-ə'lā-shən ə,nal-ə-səs }

**partial correlation coefficient** [STAT] A measure of the strength of association between a dependent variable and one independent variable when the effect of all other independent variables is removed; equal to the square root of the partial coefficient of determination. { 'pär-shəl ,kär-ə'lā-shən ,kō-i,fish-ənt }

**partial derivative** [MATH] A derivative of a function of several variables taken with respect to one variable while holding the others fixed. { 'pär-shəl də'riv-əd-iv }

**partial differential equation** [MATH] An equation that involves more than one independent variable and partial derivatives with respect to those variables. { 'pär-shəl ,dif-ə'ren-shəl i,kwä-zhän }

**partial dislocation** [CRYSTAL] The line at the edge of an extended dislocation where a slip through a fraction of a lattice constant has occurred. { 'pär-shəl ,dis-lō-kä-shən }



## toeboard

retaining wall on the side opposite to the retained material. [GEOL.] The leading edge of a thrust nappe. [MET.] The junction between the face of a weld and the base metal. [MIN ENG.] 1. The burden of material between the bottom of the borehole and the free face. 2. The bottom of the borehole. 3. A spurn, or small pillar of coal. 4. The base of a bank in an open-pit mine. { 'tō }

**toeboard** [BUILD] A board placed around a platform or on a sloping roof to prevent personnel or materials from falling off. [ENG.] A support or reinforcement that forms the lowest vertical face of a cabinet or similar installation, at toe level, and is frequently recessed. { 'tō,bōrd }

**toe crack** [MET.] A crack in the base metal at the toe of a weld. { 'tō,kɹæk }

**toe cut** [ENG.] In underground blasting, the cut obtained by the use of toe holes. { 'tō,kət }

**toe hole** [ENG.] A blasting hole, usually drilled horizontally or at a slight inclination into the base of a bank, bench, or slope of a quarry or open-pit mine. { 'tō,hōl }

**toe-in** [MECH ENG.] The degree (usually expressed in fractions of an inch) to which the forward part of the front wheels of an automobile are closer together than the rear part, measured at hub height with the wheels in the normal "straight ahead" position of the steering gear. { 'tō,in }

**toenailing** [ENG.] The technique of driving a nail at an angle to join two pieces of lumber. { 'tō,nāl-ŋg }

**toe-out** [MECH ENG.] The outward inclination of the wheels of an automobile at the front on turns due to setting the steering arms at an angle. { 'tō,aʊt }

**toeplate** See kickplate. { 'tō,plāt }

**Toepler-Holtz machine** [ELEC.] An early type of machine for continuously producing electrical charges at high voltage by electrostatic induction, superseded by the Wimhurst machine. Also known as Holtz machine. { 'tēp-lor 'hōlts mæ,ʃən }

**toe-to-toe drilling** [ENG.] The drilling of vertical large-diameter blasting holes in quarries and opencast pits. { 'tō,tō 'dril-ŋg }

**toe wall** [CIV ENG.] A low wall constructed at the bottom of an embankment to prevent slippage or spreading of the soil. { 'tō,wōl }

**tofan** [METEOROL.] A violent spring storm common in the mountains of Indonesia. { 'tō,fæn }

**to-from indicator** [NAV.] An indicator that shows whether an aircraft is flying toward or away from an omnirange station. Also known as sense indicator. { 'tō 'frəm,jn-də,kæd-ər }

**Togaviridae** [VIROL.] A family of positive-strand ribonucleic acid (RNA)-containing viruses characterized by spherical enveloped particles with an icosahedral nucleocapsid containing linear single-stranded RNA; it contains the genera *Alphavirus* (arbovirus A; prototype Sindbis virus), *Flavivirus* (arbovirus B; prototype yellow fever), *Rubivirus* (rubella virus), and *Pestivirus* (mucosal disease virus). { 'tō,gə'vīr-ə,dī }

**toggle** [COMPUT SCI.] 1. To switch back and forth between two stable states or modes of operation. 2. A hardware or software device that carries out this switching action. [ELECTR.] To switch over to an alternate state, as in a flip-flop. [MECH ENG.] A form of jointed mechanism for the amplification of forces. { 'täg-əl }

**toggle bolt** [DES ENG.] A bolt having a nut with a pair of pivotal wings that close against a spring; wings open after emergence through a hole or passage in a thin or hollow wall to fasten the unit securely. { 'täg-əl,bōlt }

**toggle condition** [ELECTR.] Condition of a flip-flop circuit in which the internal state of the flip-flop changes from 0 to 1 or from 1 to 0. { 'täg-əl,kən,dish-ən }

**toggle press** [MECH ENG.] A mechanical press in which a toggle mechanism actuates the slide. { 'täg-əl,pres }

**toggle switch** [ELEC.] A small switch that is operated by manipulation of a projecting lever that is combined with a spring to provide a snap action for opening or closing a circuit quickly. [ELECTR.] An electronically operated circuit that holds either of two states until changed. { 'täg-əl,switʃ }

**toise** [GEOD.] A unit of length equal to about 6.4 feet (1.95 meters); used in early geodetic surveys. { 'tōiz }

**tokamak** [PL. PHYS.] A device for confining a plasma within a toroidal chamber, which produces plasma temperatures, densities, and confinement times greater than that of any other such device; confinement is effected by a very strong externally applied toroidal field, plus a weaker poloidal field produced

## Tollen's aldehyde test

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by a toroidally directed plasma current, and this current causes ohmic heating of the plasma. { 'tāk-ə,mak }

**token** [COMMUN.] A unique grouping of bits that is transmitted as a unit in a communications network and used as a signal to notify stations in the network when they have control and are free to send information or take other specified actions. [COMPUT SCI.] 1. A distinguishable unit in a sequence of characters. 2. A single byte that is used to represent a keyword in a programming language in order to conserve storage space. 3. A physical object, such as a badge or identity card, issued to authorized users of a computing system, building, or area. { 'tō-kən }

**tokenization** [COMPUT SCI.] The conversion of keywords of a programming language to tokens in order to conserve storage space. { 'tō-kən-ə'zā-shən }

**token-passing protocol** [COMMUN.] The assignment of data communications channels to units which communicate according to a fixed priority sequence. { 'tō-kən 'pæs-ŋg 'prōd-ə,kōl }

**token-sharing network** [COMMUN.] A communications network in which all the stations are linked to a common bus and control is determined by a group of bits (token) that is passed along the bus from station to station. { 'tō-kən 'sher-ŋg 'net,wɜrk }

**tolazoline hydrochloride** [ORG. CHEM.]  $C_{10}H_{12}N_2 \cdot HCl$  Water-soluble white crystals, melting at 173°C; used as a sympatholytic and vasodilator. Also known as prisol. { 'tāl'az-ə,leŋ 'hī-drə'klōr,īd }

**tolbutamide** [PHARM.]  $C_{12}H_{18}N_2O_5S$  A hypoglycemic drug effective when administered orally. { 'tāl'byūd-ə,mīd }

**toleragen** [IMMUNOL.] A substance which, in appropriate dosages, produces a state of specific immunological tolerance in humans or animals. { 'tāl-ə-rə-jən }

**tolerance** [DES ENG.] The permissible variations in the dimensions of machine parts. [ENG.] A permissible deviation from a specified value, expressed in actual values or more often as a percentage of the nominal value. [PHARM.] 1. The ability of enduring or being less responsive to the influence of a drug or poison, particularly when acquired by continued use of the substance. 2. The allowable deviation from a standard, as the range of variation permitted for the content of a drug in one of its dosage forms. { 'tāl-ə-rəns }

**tolerance chart** [DES ENG.] A chart indicating graphically the sequence in which dimensions must be produced on a part so that the finished product will meet the prescribed tolerance limits. { 'tāl-ə-rəns,çärt }

**tolerance dose** See permissible dose. { 'tāl-ə-rəns,dōs }

**tolerance interval** [ANALY. CHEM.] That range of values within which it has been calculated that a specified percentage of individual values of measurements will lie with a stated confidence level. { 'tāl-ə-rəns,jn-tər-vəl }

**tolerance limits** [DES ENG.] The extreme values (upper and lower) that are permitted by the tolerance. { 'tāl-ə-rəns,līm-īts }

**tolerance unit** [DES ENG.] A unit of length used to express the degree of tolerance allowed in fitting cylinders into cylindrical holes, equal, in micrometers, to  $0.45 D^{1/3} + 0.001 D$ , where  $D$  is the cylinder diameter in millimeters. { 'tāl-ə-rəns,yü-nət }

**ortho-tolidine** [ORG. CHEM.]  $C_6H_3(CH_3)NH_2$  Light-sensitive, combustible white to reddish crystals soluble in alcohol and ether, slightly soluble in water, melts at 130°C; used as an analytical reagent and a curing agent for urethane resins. { 'ör-thō 'tāl-ə,dēn }

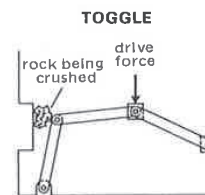
**toll** [COMMUN.] 1. Charge made for a connection beyond an exchange boundary. 2. Any part of telephone plant, circuits, or services for which toll charges are made. { 'tōl }

**toll call** [COMMUN.] Telephone call to points beyond the area within which telephone calls are covered by a flat monthly rate or are charged for on a message unit basis. { 'tōl,kɔl }

**toll center** [COMMUN.] A telephone central office where trunks from end offices are joined to the long-distance system, and operators are present; it is a class-4 office. { 'tōl,sen-tər }

**toll enrichment** [NUCLEO.] A proposed arrangement whereby privately owned uranium could be enriched in uranium-235 content in government facilities upon payment of a service charge by the owners. { 'tōl in'rich-mənt }

**Tollen's aldehyde test** [ANALY. CHEM.] A test that uses an ammoniacal solution of silver oxides to test for aldehydes and ketones. { 'tāl-ənz 'al-də,hīd,tetst }



Toggle mechanism used in a rock crusher; relatively small drive force causes large force to be applied to rock.